

# Pipelined Carry-Lookahead Generation for a Fast Incrementer

## Abstract of Disclosure

An incrementer pipelines the generation of carry lookahead signals. Count registers hold a current count of the incrementer. The current count is fed back as inputs to sum logic, which generates sum bits that are latched into the count registers as a next count. All-ones detect logic detects when all lesser-significance bits in the current count are ones. When all lesser bits are ones, the sum logic toggles the count bit to generate the sum bit for that bit position. Pre-carry logic generates pre-carry lookahead signals from the sum bits. The pre-carry lookahead signals are latched into pipelined carry registers. The pipelined carry registers drive pipelined carry lookahead signals to the all-ones detect logic. Thus carry lookahead signals are generated from a prior sum but used in a next clock cycle to generate then next sum.

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Genotype	Age	Sex	Weight (g)	Length (mm)	Survival (%)	Survival (days)	Survival (weeks)	Survival (months)	Survival (years)
WT	10	Male	10.0	10.0	100	100	100	100	100
WT	10	Female	10.0	10.0	100	100	100	100	100
WT	20	Male	20.0	20.0	100	100	100	100	100
WT	20	Female	20.0	20.0	100	100	100	100	100
WT	30	Male	30.0	30.0	100	100	100	100	100
WT	30	Female	30.0	30.0	100	100	100	100	100
WT	40	Male	40.0	40.0	100	100	100	100	100
WT	40	Female	40.0	40.0	100	100	100	100	100
WT	50	Male	50.0	50.0	100	100	100	100	100
WT	50	Female	50.0	50.0	100	100	100	100	100
WT	60	Male	60.0	60.0	100	100	100	100	100
WT	60	Female	60.0	60.0	100	100	100	100	100
WT	70	Male	70.0	70.0	100	100	100	100	100
WT	70	Female	70.0	70.0	100	100	100	100	100
WT	80	Male	80.0	80.0	100	100	100	100	100
WT	80	Female	80.0	80.0	100	100	100	100	100
WT	90	Male	90.0	90.0	100	100	100	100	100
WT	90	Female	90.0	90.0	100	100	100	100	100
WT	100	Male	100.0	100.0	100	100	100	100	100
WT	100	Female	100.0	100.0	100	100	100	100	100
WT	110	Male	110.0	110.0	100	100	100	100	100
WT	110	Female	110.0	110.0	100	100	100	100	100
WT	120	Male	120.0	120.0	100	100	100	100	100
WT	120	Female	120.0	120.0	100	100	100	100	100
WT	130	Male	130.0	130.0	100	100	100	100	100
WT	130	Female	130.0	130.0	100	100	100	100	100
WT	140	Male	140.0	140.0	100	100	100	100	100
WT	140	Female	140.0	140.0	100	100	100	100	100
WT	150	Male	150.0	150.0	100	100	100	100	100
WT	150	Female	150.0	150.0	100	100	100	100	100
WT	160	Male	160.0	160.0	100	100	100	100	100
WT	160	Female	160.0	160.0	100	100	100	100	100
WT	170	Male	170.0	170.0	100	100	100	100	100
WT	170	Female	170.0	170.0	100	100	100	100	100
WT	180	Male	180.0	180.0	100	100	100	100	100
WT	180	Female	180.0	180.0	100	100	100	100	100
WT	190	Male	190.0	190.0	100	100	100	100	100
WT	190	Female	190.0	190.0	100	100	100	100	100
WT	200	Male	200.0	200.0	100	100	100	100	100
WT	200	Female	200.0	200.0	100	100	100	100	100
WT	210	Male	210.0	210.0	100	100	100	100	100
WT	210	Female	210.0	210.0	100	10			